

REMARKS

Upon entry of the present amendment, the claims will have been represented without any amendments and thus without changing the scope or terminology thereof but merely to ensure that there are adequate spaces between words and phrases to thus render the claims more easily readable and so as to eliminate the basis for the Examiner's objection to claims 2-30.

Initially, Applicant wishes to respectfully thank the Examiner for acknowledging his Claim for Foreign Priority under 35 U.S.C. § 119 as well as for confirming receipt of the certified copy of the priority document. Applicant notes that the Examiner did not acknowledge or indicate acceptance of the drawings filed herein but in view of the lack of any objection thereto, it is assumed that the drawings are approved.

Moreover, Applicant notes the filing of an Information Disclosure Statement in the present application on April 17, 2002 in which a number of pending U.S. applications were cited and copies provided. Applicant respectfully requests a confirmation of the consideration of these documents by a written indication from the Examiner to such effect, particularly since these applications were cited in full compliance with the relevant regulations.

In the outstanding Official Action, the Examiner objected to claims 2-30 because of a number of informalities. In particular, the Examiner indicated that there was a lack of appropriate spacing between various words and phrases of the claims. By the present Response, Applicant has presented a rewritten version of all of the claims to ensure that there are adequate spaces provided between the words and phrases so as to render the claims more readable and more easily understandable. Only format

changes, but no language changes, have been made and thus the claims are labeled "Original".

In the outstanding Official Action, the Examiner indicated that claims 2-30 would be allowable if rewritten or amended to overcome the objection set forth. In view of the rewriting of these claims, it is respectfully submitted that these claims are now clearly in condition for allowance. The Examiner is thanked for his indication of allowable subject matter.

Applicant further notes the Examiner's Statement of Reasons for allowable subject matter. In this regard, while Applicant does not disagree with any of the features enumerated in the Examiner's reasons, Applicant further notes that each of the claims in the present application recites a combination of features and that the patentability of each of the claims is also based upon the totality of the features recited therein. Accordingly, the reasons for allowability should not be limited to those features enumerated by the Examiner.

Claim 1 was rejected under 35 U.S.C. § 102(e) as being anticipated by CHEN (U.S. Patent No. 6,570,616). Applicant respectfully traverses the above rejection and submits that CHEN does not disclose the combination of features recited in Applicant's claim 1. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the outstanding rejection of claim 1 together with an indication of the allowability thereof. Such action is respectfully requested and is now believed to be appropriate and proper.

Applicant's invention is directed to an image interpolation device. In particular, as set forth in claim 1, the image interpolation device of the present invention includes an imaging device that has a light receiving surface and on which pixels are disposed in a

matrix arrangement. A subject image is formed on the light receiving surface to generate first color signals corresponding to the subject image in the pixels. A first interpolation processor performs a first interpolation process using the first color signals generated in a plurality of pixels positioned adjacent to an objective pixel to obtain a second color signal of the objective pixel. Additionally, a second interpolation processor performs a second interpolation process using the second color signal of the objective pixel to modify at least one of the first color pixels.

It is respectfully submitted that the combination of features recited in Applicant's claim 1 is not taught, disclosed nor rendered obvious by the CHEN reference relied upon by the Examiner. Accordingly, Applicant respectfully requests reconsideration and withdrawal of the outstanding rejection.

In setting forth the rejection, the Examiner described the CHEN reference as teaching that "the image data stored in the image memories 5, 6 and 7 illustrated in Figs. 4A-4C is missing pixels for each of the red, green and blue color components. These missing pixels are replaced in the two-dimensional data by forming interpolated pixels by interpolation processing as shown in Fig. 10". Thus, it is an essential feature of CHEN that when a particular color component does not exist at a target position, interpolation is carried out to provide an appropriate value for the target position. On the contrary, when a particular color component is present or exists at the target position, the interpolation is not carried out because a particular color component is already present at the target position. Applicant's invention, however, works in a diametrically opposite fashion. In particular, according to the present invention, when a particular color component is present at the target position, interpolation is carried out.

In this regard, the Examiner's attention is respectfully directed to relationship 10 set forth at page 18 of the instant specification as well as to the disclosure at page 18, line 9 through page 19, line 7. As can be seen, according to the teachings of the present invention, the interpolation takes place when the various color components for the objective or target pixel are present.

In this regard, Applicant notes that claim 1 recites that the second interpolation processor performs a second interpolation process... "to modify at least one of said first color signals". This is not true in CHEN where it is only when a color signal is missing for a target or objective pixel that interpolation takes place. Accordingly, CHEN does not provide a disclosure that is adequate or sufficient for either anticipating or rendering obvious the combination of features recited in Applicant's claim 1.

In the CHEN patent, at steps S3, S7 and S9b of Fig. 10, determinations are made whether G, R and B color interpolation is necessary. In this regard, the Examiner's attention is respectfully directed, inter alia, to column 8, lines 49-60 of CHEN which discloses the use of interpolated pixels for missing pixels and column 9, lines 21-25 with respect to step S3 as well as column 12, lines 38-43 relating to the interpolation for the red color component (step S8).

As can be seen from the above, it is only when a particular color component is not present (or is missing) for the target or objective pixel that interpolation takes place in CHEN. As clearly evidenced by Applicant's claim language, this does not meet the requirements of Applicant's claim and accordingly, claim 1 is submitted to be clearly patentable over the CHEN disclosure. An action to such effect is respectfully requested in due course.

P21596.A05

Accordingly, in view of the above, reconsideration and withdrawal of the outstanding rejection of claim 1 is respectfully requested and is believed to be appropriate.

SUMMARY AND CONCLUSION

Applicant has made a sincere effort to place the present application in condition for allowance and believes that he has now done so. Applicant has traversed the rejection of claim 1 and has pointed out the significant and substantial shortcomings and deficiencies thereof. In this regard, Applicant has discussed Applicant's invention as recited in claim 1 as well as the disclosure supporting the recitations of claim 1. Applicant has contrasted the features of Applicant's invention with the disclosure of the reference. Applicant has further discussed the disclosure of the reference and has pointed out the shortcomings thereof with respect to the features of Applicant's claims. Accordingly, Applicant has provided a clear evidentiary basis supporting the patentability of all the claims in the present application and respectfully requests an indication to such effect in due course.


Applicant has further presented claims 2-30 with format changes to eliminate the informality noted by the Examiner without narrowing or changing the scope of the claims in any fashion. Accordingly, reconsideration of the objection is requested in due course.

Any amendments to the claims which have been made in this amendment, and which have not been specifically noted to overcome a rejection based upon the prior art, should be considered to have been made for a purpose unrelated to patentability, and no estoppel should be deemed to attach thereto.

P21596.A05

Should the Examiner have any questions or comments regarding this Response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,  
Nobuaki ABE

  
Bruce H. Bernstein  
Reg. No. 29,027

William Pieprz  
Reg. No. 33,630

May 9, 2005  
GREENBLUM & BERNSTEIN, P.L.C.  
1950 Roland Clarke Place  
Reston, VA 20191  
(703) 716-1191